

A car starts from rest and has a displacement of 85 m in 2.34 s.

a) What is the car's velocity?

b) What is the car's acceleration?

$$a) \quad \overline{v} = \frac{\overline{d}}{t}$$

$$v = \frac{85 \text{ m}}{2.34 \text{ s}}$$

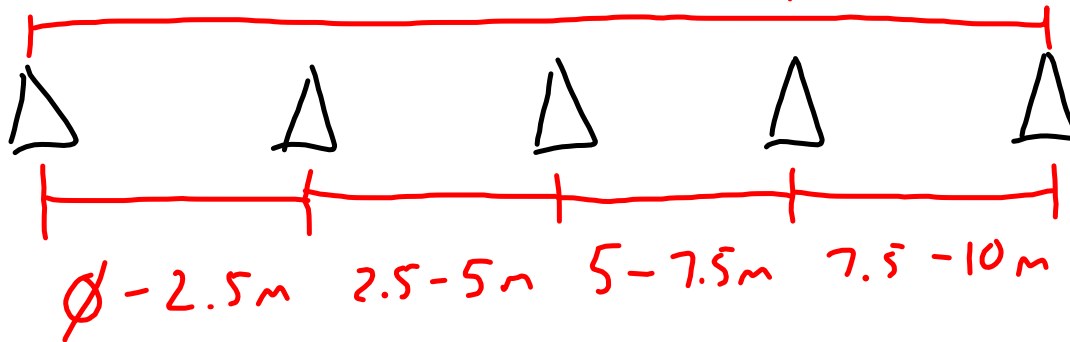
$$= 36.32 \text{ m/s}$$

$$b) \quad \overline{a} = \frac{\overline{v}_f - \overline{v}_i}{t}$$

$$a = \frac{36.32 \text{ m/s} - 0 \text{ m/s}}{2.34 \text{ s}}$$

$$= 15.52 \text{ m/s}^2$$

Crab-Walking Lab $d_{\text{Total}} = 10 \text{ m}$ t_{Total}



t_1 t_2 t_3 t_4

$d_1 = 2.5 \text{ m}$ $d_2 = 2.5 \text{ m}$ $d_3 = 2.5 \text{ m}$ $d_4 = 2.5 \text{ m}$

$$s_1 = \frac{d_1}{t_1} \quad s_2 = \frac{d_2}{t_2} \quad s_3 = \frac{d_3}{t_3} \quad s_4 = \frac{d_4}{t_4}$$

$$s_{\text{Total}} = \frac{d_{\text{Total}}}{t_{\text{Total}}}$$

Graphing:

x-axis \rightarrow time \rightarrow \emptyset s to ~ 15 s^(?)

y-axis \rightarrow ^(avg.) speed \rightarrow \emptyset m/s to ?

5 total points

$(\emptyset \text{ s}, \emptyset \text{ m/s})$

$(t_{2.5\text{m}}, s_{2.5\text{m}})$

$(t_{5.0\text{m}}, s_{5.0\text{m}})$

$(t_{7.5\text{m}}, s_{7.5\text{m}})$

$(t_{10.0\text{m}}, s_{10.0\text{m}})$

Graph Analysis:

- speed is _____. choose one!
- Person had a [positive acceleration, negative acceleration, no acceleration] choose one!
because the velocity [increased, decreased, stayed the same].